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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/813,233 | 03/31/2004 | Shunpei Yamazaki | 740756-2719 | 3870 |
| 22204 | 7590 | 11/14/2005 | EXAMINER | |
| NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128 | | | | DANG, TRUNG Q |
| ART UNIT | | PAPER NUMBER | | |
| | | | | 2823 |

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/813,233 | YAMAZAKI ET AL. | |
| | Examiner | Art Unit | |
| | Trung Dang | 2823 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 October 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 3-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 3-18 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 31 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/387,053.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 3-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (US 6,246,070 of record)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131.

With reference to Figs. 1A-2E, the prior art teaches the claimed invention in that it discloses a method for manufacturing an N-channel TFT semiconductor device comprising the steps of:

forming a gate electrode 102 over a substrate;

forming a gate insulating films 103 over the gate electrode;

forming a semiconductor film 104 over the gate insulating film;

forming an insulating film 105 over the semiconductor film 104 (Fig. 1B and related text);

crystallizing said semiconductor film by irradiating it with infrared light or ultraviolet light through said insulating film 105 to form a crystalline semiconductor film (bottom of col. 8);

covering a region to become a channel formation region of said crystalline semiconductor film with a first mask 109a;

doping a region to become a source region and a region to become a drain region of said crystalline semiconductor film with a trivalent or pentavalent impurity element (Fig 1E and related text);

covering a portion of the first mask 109a and one of a portion of the region to become the source region and a portion of the region to become the drain region with a second mask 112 (see the left portion 114 of the N-channel TFT in Fig. 2A), wherein the other one of the region to become the source region and the

region to become the drain region is not covered with the second mask (see the right region 201 of the N-channel TFT in Fig. 2A); forming an interlayer insulating film 117 over the first mask and the second mask; and forming metal wiring lines 119/120, thereby completing the N-channel TFT having source/drain regions 114/113 (Fig. 2E).

Note the following interpretations explaining as to why the reference reads on the amended independent claims 1, 6, and 16.

- a) The claimed limitation regarding covering a portion of the first mask with a second mask does not exclude the second mask covering an entire surface the first mask. All that is specified by the limitation is the second mask cover a portion of the first mask, and the entire surface of the first mask includes a portion thereof hence mask 112 reads on the second mask as claimed.
- b) Since source/drain regions of the N-channel TFT of Fig.2E include both lightly doped source/drain region 114 and heavily doped source/drain region 113, Fig. 2A shows the second mask 112 covering a portion of the first mask and a portion 114 of the source/drain region on the left while the other one, i.e., region 201 on the right that will become the heavily doped source/drain region 113 is not covered with the second mask.

For claims 3 and 11, see col.5, lines 31-34 and claim 23 of the reference. Note

that a hydrogen compound is a hydride.

For claims 4 and 12, see col. 5, lines 35-37 and claim 24 of the reference.

For claims 5 and 13, see col. 5, lines 38-41 and claim 25 of the reference.

For claims 7-9, see cols. 7-8 for embodiments which disclose the limitations of claims 7-9.

For claim 10, see Embodiment 2 in col. 13, lines 21-23 in which a catalytic element for promoting crystallization of silicon is used.

For claim 16, the mask 112 of the reference reads on the claimed mask. That is the mask 112 covering a portion of a channel region and portion 114 (portion of a region to become a source region) while the other portion 201 (portion of a region to become a drain region) is not covered with the mask.

Response to Arguments

3. Applicant's arguments filed 9/29/05 have been fully considered but they are not persuasive.

In the Remarks, applicants argue that, contrary to the claimed invention, Yamazaki discloses that both of a portion of a source region and a portion of a drain region are covered with a second mask (112). Hence, the presently claimed invention clearly distinguishes over that of Yamazaki.

The Examiner respectfully disagrees. As pointed out in the above rejection, the source/drain of a TFT device includes both lightly doped region 114 and heavily doped

region 113. Fig. 2A clearly shows the mask 112 covering region 114 (i.e., a portion of a source region) while region 201 (i.e., a portion of a drain region) is not covered with the mask.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Trung Dang
Primary Examiner
Art Unit 2823